PHOTO #4.1 1107.005.jpg	Keddy Mill: South Wall Excavation at Pier 24.

PHOTO #4.2 1107.006.jpg	Keddy Mill: Fill excavated from South Wall Excavation at Pier 24

PHOTO #4.5 1107 022 jpg	South Wall Excavation at Pier 24: Note loose fill in excavation.

PHOTO #4.6 1107 027 jpg	South Wall Excavation at Pier 24: Completed excavation backfilled with existing material. Note that top of fill is approximately at the top of the grade beam at line 24.

APPENDIX C

SUMMIT GEOTECHNICAL REPORT AND CONCRETE TESTING

SUMMIT

ENVIRONMENTAL CONSULTING • GEOTECHNICAL ENGINEERING • CONSTRUCTION MATERIALS TESTING

Geotechnical Report
Little Falls Mill Renovation
Depot Street
South Windham, Maine

Prepared for:

Resurgence Engineering & Preservation, Inc.

Prepared by:

Summit Geoengineering Services
Project #17417
November 2008

SUMMIT

ENVIRONMENTAL CONSULTING • GEOTECHNICAL ENGINEERING • CONSTRUCTION MATERIALS TESTING

November 14, 2008
Summit #17417

Alfred Hodson, P.E.
Resurgence Engineering
132 Brentwood Street
Portland, Maine 04103

Reference: Geotechnical Engineering Services
Little Falls Mill Renovation – 13 Depot Street, South Windham, Maine

Dear Al,

This report summarizes our geotechnical investigation for the proposed Little Falls Mill renovation located at 13 Depot Street in South Windham, Maine. Our scopes of service was to evaluate the subgrade conditions beneath the western portion of the facility considered for renovation and provide geotechnical recommendations for the design and construction of new foundations, if necessary, during the retrofit. Our work included performing 5 test borings and 2 probes at the site, performing laboratory testing, and preparing this report summarizing our findings and geotechnical recommendations.

1.0 Project and Site

The project consists of renovating the existing Little Falls Mill for new condominium units. We understand preliminary retrofit includes ground level car parking with second and third floor condominium units. The footprint proposed for retrofit is approximately 19,000 square feet. The portion of the Little Falls Mill being considered for renovation is the larger section oriented east to west, including the building portions extending over the Presumpscot River towards the existing hydro dam. The Presumpscot River to the southwest, Route 202 toward the west, Depot Street to the north, and a railroad line toward the east borders the site.

The portion of the Little Falls Mill structure considered for renovation generally consists of reinforced concrete framing supported on spread footings or short piers overlying shallow bedrock within the eastern portion and supported on 3 by 3 foot diameter concrete piles/piers founded on bedrock within the western portion. Significant portions of the ground floor slab within the west portion is clear spanned over the Presumpscot River supported by concrete grade beams founded on pile caps. An approximate 3 to 6 foot of void space was encountered beneath the existing slab portions extending over the Presumpscot River. Depth to bedrock beneath the existing ground floor slab ranged from approximately 1 to 30 feet.

Existing grades within the proposed retrofit footprint range from an approximate elevation of 110 feet at the northeast corner to an approximate elevation of 90 feet at the southwest corner located within the Presumpscot River. The existing first floor slab elevation is at or near elevation 94 feet. The Presumpscot River elevation was near elevation 92 feet during our geotechnical investigation.

2.0 Explorations & Laboratory Testing

Summit observed the subsurface conditions at the site with the drilling of 5 borings and 2 probes on September 30 and October 1, 2008. The borings were drilled to depths of refusal ranging from 4.2 to 34.7 feet, elevations 94 to 65 feet, using an ATV drilling rig provided and operated by Northern Test Boring under contract to Summit. The borings were advanced using driven casing with rotary wash. The probes were advanced using 2¼-inch solid stem augers. Standard 24-inch long split spoon samples were obtained at continuous and 5-foot intervals. A 3-foot rock core was performed from 18 to 21 feet, elevations 76 to73 feet, at boring B-1. The boring and probe explorations were located prior to drilling by pacing and taping from existing site features. Figure 1, Boring Location Plan, is attached at the end of this report under Appendix A. Logs of the explorations are attached under Appendix B.

Seven samples were collected and tested for Moisture Contents in accordance with ASTM D2216 for the glacial marine clay deposits encountered at depths ranging from 5 to 29 feet. The moisture contents were found to range from 23.2 to 45.3 percent. A moisture content of 56.1 percent was obtained at boring B-4, from a depth of 10 to 12 feet, for an organic silt layer. Atterberg Limits in accordance with ASTM D4318, grain size analyses in accordance with ASTM D422, and Consolidation in accordance with ASTM D2435 were performed on an undisturbed shelby tube sample collected from boring B-5 at a depth of 17 to 19 feet. Copies of the lab results are attached in Appendix C. Results are summarized on the following table:

LABORATORY RESULTS SUMMARY TABLE

Sample Location	Consolidation			Gradation			Atterberg Limits		Moisture Contents
	P'c	Cr	Cc	%Sand	%Silt	%Clay	LL	PI	WC
B-5, UT-2	4.9 ksf	0.03	0.41	5.8%	55.6%	38.6%	38	16	37.9%

Note: Based on ASTM D422 test and Unified Soil Classification System particle distribution.

3.0 Subsurface Conditions

In general, the subgrade encountered at the site consisted of 5 to 11 feet of ***fill*** overlying 1.5 to 6 feet of ***glacial alluvium*** overlying 4 to 20 feet of ***glacial marine deposits*** overlying ***bedrock*** encountered at a depth range of 4.2 to 34.7 feet, near elevations 94 to 65 feet. ***Topsoil*** was encountered at the surface of borings B-3 through B-5 and probes P-1 and P-2 with a thickness range of 3 to 5 inches. ***Groundwater*** was encountered at a depth range of approximately 0.5 to 8 feet, near elevation 92 feet.

The ***topsoil*** encountered at the site generally consisted of dark brown silt with rootlets and is visually classified as ML in accordance with the Unified Soils Classification System (USCS). The topsoil was generally loose and moist.

Fill encountered at the site generally consisted of dark brown sand with little gravel, silt, and organics and is visually classified as SM-SP in accordance with the Unified Soil Classification System (USCS). Occasional to predominate brick, ash, coal, and/or wood debris was also encountered within the fill. SPT-N values for the fill ranged from weight of sampler to 5 blows per foot (bpf) to 58 bpf and averaged 2 bpf, indicating very loose conditions. The fill was generally moist to wet with depth.

Glacial alluvium encountered at the site generally consisted of dark brown sand with some to little gravel and trace of silt and is visually classified as SW in accordance with the USCS. SPT-N values for the glacial alluvium ranged from 7 to 11 blows per foot (bpf) indicating loose to compact conditions. The glacial alluvium was generally wet.

The ***glacial marine deposits*** encountered at the site generally consisted of gray medium-fine sand with some to little silt and clay or olive grading to gray silty clay with trace of thin sand seams. The sandy layer is visually classified as SM and based on the atterberg limits the clayey layer is classified as CL (lean clay) in accordance with the USCS. SPT-N values for the sandy glacial marine ranged from 5 to 17 bpf and averaged 13 bpf indicating compact conditions. SPT-N values for the clayey glacial marine deposits ranged from 1 to 8 bpf and averaged 3 bpf indicating firm to soft conditions. Pocket penetrometer readings recorded for split spoon cohesive samples ranged from 4,000 to 500 psf or less. Field vane shear tests conducted for soft clay layers resulted in shear strengths ranging from 760 psf to 1,140 psf. The moisture contents, atterberg limits, and the consolidation test results indicate the gray silty clay is slight to moderate over-consolidated. The glacial marine was generally moist grading to wet.

Bedrock was encountered at a depth range of 4.2 and 34.7 feet, elevations 94 to 65 feet. A rock core sample was obtained from a depth of 18 to 21 feet (approximate elevations 76 to 73 feet) at boring B-1. The bedrock consists of medium to soft, moderately fractured and weathered, medium grained dark gray Schist with muscovite-biotite-quartz seams. The bedrock is estimated as having a hardness value of 3 using the Mohs hardness scale.

The joints within the bedrock were both dipping to steep (35 to 85 degrees) and were generally moderately to slightly weathered, undulated, rough, and loose. The percent recovery of the core (ratio of total recovered sample length divided by the total coring length expressed as a percent) was 100 percent for bedrock from 18 to 21 feet. The RQD (Rock Quality Designation) of the rock core is expressed as the sum of rock pieces 4 inches or greater in length compared to the length of the core sample. The RQD of the cored rock was 31 percent. The RQDs and recoveries are shown on the enclosed boring log. Based on the degree of fracturing, weathering, and the RQD of the core, the bedrock encountered is considered to be of fair quality.

Groundwater was observed within the open boreholes at a depth range of 0.5 to 8 feet, near an approximate elevation of 92 feet. Due to the close proximity to the Presumpscot River, groundwater is generally influenced by the river elevation.

4.0 Evaluation

Foundation loadings and/or proposed site grading were not available for this report. In summary, the following geotechnical issues should be considered as part of design and construction for foundations, if necessary, during renovation of the Little Falls Mill:

- Presence of underlying very loose sandy fill mixed with brick, ash, coal, and/or wood and its potential for settlement, liquefaction, and/or low bearing capacity.
- Presence of underlying soft glacial marine silty clay and its potential for settlement where fills, if required, are greater then approximately 5 to 8 feet.
- Presence of significant groundwater and/or the Presumpscot River where excavations, if required, are performed below an approximate elevation of 92 feet.

The biggest geotechnical consideration for design of new foundations, if necessary, is the potential for settlement of the loose existing fill and/or soft glacial marine clay layer. Due to the relatively large void space within the western portion of the building, its proximity to the Presumpscot River, and the very loose underlying fill, a structural slab supported by installed and/or the existing piles is recommend.

In general, we recommend a structural slab and/or footings supported by existing or installed piles be considered from column line 18 to 47. A schematic site plan included column lines generated by Resurgence Engineering and Preservation is included with this report in Appendix A. We anticipate conventional slab on grade and/or spread footings to be suitable for foundations constructed within the eastern portion of the site from column line 1 to 18 founded on competent bedrock and/or suitable subgrade soils.

To further evaluate actual column locations suitable for slab on grade/spread footings or structural slab/pile foundations, additional test pits and/or test borings could be performed to better profile the presence and thickness of the loose fill beneath the existing ground level slab.

5.0 Foundation Recommendations

General

Foundation loadings and/or proposed site grading were not available for this report. Design parameters for new foundations, if necessary during renovation, are based on the observed subgrade conditions. We recommend that Summit be retained to review final construction documents relavent to the recommendations in this report.

A structural slab and/or footings supported by existing or installed piles are recommended from column line 18 to 47. Conventional slab on grade and/or spread footings are anticipated to be suitable for foundations constructed within the eastern portion of the site from column line 1 to 18. Preliminary foundation design recommendations are provided below.

Conventional Foundations

We recommend new foundations be proportioned using an allowable bearing pressure of 3,000 psf for footings constructed on soil (where suitable) and 20,000 psf for footings constructed on bedrock. Total settlement for this allowable bearing pressure is estimated to be less than 1 inch for footings on soil and negligible for footings constructed on bedrock. The bearing pressures and associated settlements are based on the following conditions:

- Exterior footings are placed to a minimum depth of 4 feet or on competent bedrock to provide adequate frost protection.
- Footings are backfilled with Foundation Backfill compacted to a minimum of 95 percent of its maximum dry density, determined in accordance with ASTM D1557.
- Subgrade beneath footings consists of competent bedrock, proof-rolled suitable subgrade, compacted Foundation Backfill, and/or Crushed Stone.

The subgrade for the Little Falls Mill footprint are categorized as site classification D for foundations on soil and site classification B for foundation on bedrock in accordance with the 2006 International Building Code. The existing loose fill located within the western portion of the building within or near the Presumpscot River may be susceptible to liquefaction during seismic events. Due to this we recommend constructed piles, if necessary, be founded on competent bedrock to support new foundation loads within this portion.

Foundation Backfill should be placed in 6 to 12 inch thick lifts and compacted to 95 percent of its maximum dry density in accordance with ASTM D1557, Modified Proctor. Foundation Backfill passing the 3-inch sieve and containing no particles larger than 6 inches should meet the following gradation:

FOUNDATION BACKFILL	
Sieve Size	**Percent Passing**
3 inch	100
¼ inch	25-70
No. 40	0-30
No. 200	0-5

(Type C Aggregate, 703.06, Maine DOT Standard Specifications, Revision of 2002)

Slabs on grade (where suitable) can be designed using a subgrade modulus of 200 pci.

We recommend slabs on grade be constructed on a minimum 12-inch thick layer of Foundation Backfill. The Foundation Backfill should be placed and compacted to 95 percent of its maximum dry density determined in accordance with ASTM D1557. Additional fill required beneath the Foundation Backfill should consist of Granular Borrow. The portion of Granular Borrow soil passing the 3-inch sieve should meet the following:

GRANULAR BORROW	
Sieve Size	**Percent finer**
3 inch	100
No. 40	0 to 70
No. 200	0 to 10

Reference: MDOT Specification 703.19, Granular Borrow

The maximum particle size should be limited to 6 inches. Granular Borrow should be placed in a maximum of 12-inch lifts, and be compacted to 95 percent, in accordance with ASTM D1557.

Depending on design grading and the potential for surface water infiltration due to the surrounding topography perimeter underdrains may be required, particularly if foundations extend below an elevation of 92 feet. At a minimum, we recommend that exterior grades slope away from the building to reduce runoff water from infiltrating the Foundation Backfill.

Underdrains, if used, should consist of 4 inch rigid perforated PVC surrounded by a minimum of 6 inches of crushed stone wrapped in filter fabric (Mirafi 140N or similar) to prevent clogging from the migration of the fine soil particles in the foundation backfill soils. The underdrain pipe should be outlet to a location where it will be free flowing. Where exposed at the ground surface, the ends of pipes should be screened or otherwise protected from entry and nesting of wildlife, which could cause clogging.

Pile Supported Foundations

Based on information provided by Resurgence Engineering and Preservation Inc., we understand western portions of the Little Falls Mill are supported on 3 by 3 foot concrete piles. It is anticipated the existing concrete piles are end bearing on bedrock. In general, the ultimate end bearing capacity of concrete piles end bearing on competent bedrock is estimated as 0.25 to 0.33f'c of the pile concrete strength. Based on the bedrock encountered during our exploration and the provided concrete pile footprint, we estimate an ultimate end bearing capacity of the existing concrete piles to range from 500 to 1,500 kips. To further evaluate the capacity of the existing concrete piles, we recommend unconfined compression testing be performed for samples of the bedrock and concrete cores of the existing piles.

New piles, if necessary, could consist of short timber piles, pre-cast concrete piles, steel pipe piles, and/or short H-piles. Piles should be driven to competent bedrock. Depending on lateral loadings, battered piles may be necessary. Alternatively, micro piles could be used depending on design foundation loadings. If additional pile supported foundations are proposed, Summit can be made available to provide additional design recommendations once foundation loadings have been determined. Depending on the loadings and resulting pile size, a track mounted vibratory pile driver or similar may be adequate to install the short piles.

6.0 Earthwork Consideration

Bedrock Excavation

Depending on site grading and foundation design, excavations may require bedrock removal within the eastern portion of the site. Based on the degree of fracturing and rock hardness, bedrock excavations with mechanical tools such as a large excavator, hoe ram, or jackhammer will be effective for removing only small quantities of bedrock. If significant bedrock removal is necessary controlled blasting will be required to excavate the rock. Care should be taken during the blasting process not to excessively disturb the rock forming the sidewalls and base of the excavation. A blasting plan should be developed and implemented to control flyrock and to limit peak particle velocity, vibration frequency, and air-blast overpressure as appropriate.

Backfill Placement

Placement of Foundation Backfill and/or Granular Borrow at or near groundwater, anticipated near elevation 92 feet, may become difficult if heavy compaction equipment is used near the water surface. We recommend that fill placed at or below the groundwater level be placed after dewatering and compacted using lighter compaction equipment such as a vibratory plate compactor. Alternatively, crushed stone may be used in place of Foundation Backfill or Granular Borrow. Areas that become disturbed should be over excavated and stabilized using crushed stone, and/or geotextile filter fabric (such as Mirafi 140N or equivalent). Crushed stone should be tamped to lock the stone structure together.

Groundwater Control & Excavation Stability

Temporary dewatering may be required for excavations at the site. Moderate groundwater flow is possible within the sandy fill. We believe that shallow sumps and conventional submersible pumps will be sufficient to control groundwater during construction for minimal onsite cut areas. Dewatering within deeper cuts or heavy seepage from the adjacent Presumpscot River may require special dewatering equipment and/or techniques depending on the magnitude and presence of groundwater flow.

Due to the sensitivity of excavation stability for the very loose sandy fill and/or soft clay soils and the potential for significant groundwater, excavation support including braced excavations such as sheet piling, shoring, and/or other excavation support may be required for excavation performed adjacent to the Presumpscot River or below elevation 92 feet. We recommend that construction excavation plans by reviewed by Summit. If requested, Summit can be made available to design and provide construction excavation plans.

7.0 Closure

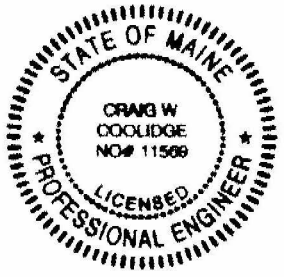
This report has been prepared for the exclusive use of Resurgence Engineering and Preservation, Inc. for the Little Falls Mill Renovation in South Windham, Maine. Our recommendations are based on professional judgment and generally accepted principles of geotechnical engineering. No other warranty is expressed or implied. Analyses, evaluations, and recommendations are based on widely spaced explorations and project construction information provided by others. Some changes in subsurface conditions from those presented in this report may occur and would not be evident until construction. Should subsurface conditions or project construction information differ materially from those described in this report, Summit should be notified so that we can re-evaluate our recommendations.

It is recommended that this report be made available in its entirety to contractors for informational purposes and be incorporated in the construction Contract Documents.

We appreciate the opportunity to serve you during this phase of your project. If there are any questions or additional information is required, please do not hesitate to call.

Sincerely yours,
Summit Geoengineering Services,

Craig W. Coolidge, P.E.
Senior Geotechnical Engineer



APPENDIX A
EXPLORATION LOCATION PLAN
SCHEMATIC SITE PLAN

SOURCE: GOOGLE EARTH AERIAL MAP

BORING/PROBE BY SUMMIT

MAGNETIC NORTH

FIGURE: 1

PROJECT #: 17487

434 Cony Road
Augusta, Maine 04330
Tel.: (207) 621-8334
Fax: (207) 626-9094
SUMMIT
GEOENGINEERING SERVICES

TITLE: EXPLORATION LOCATION PLAN
LITTLE FALLS MILL RENOVATION

SCALE: NOT TO SCALE

DRAWN BY: CWC

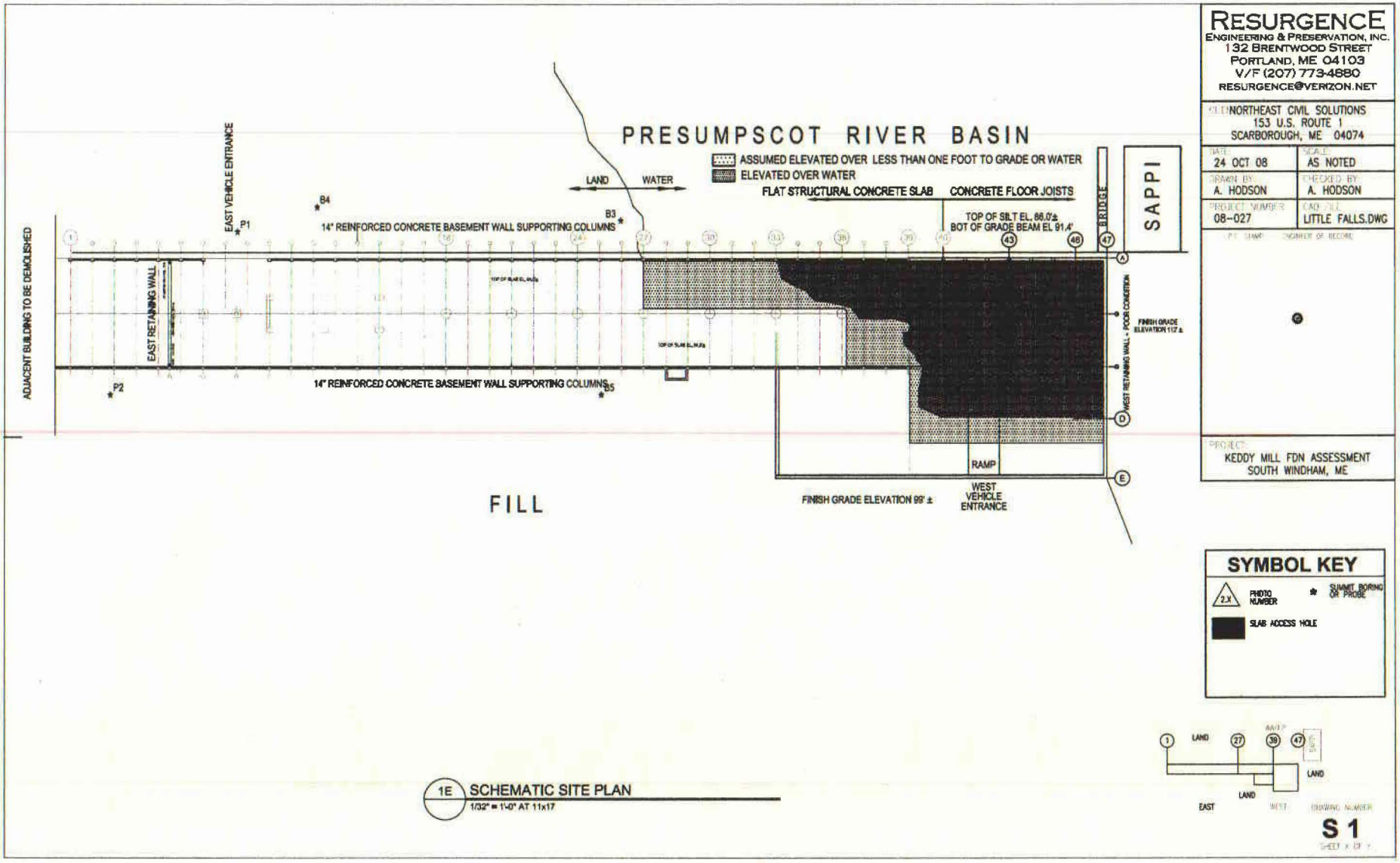
DATE: 11/11/08

APPR. BY: WMP

PROJECT: LITTLE FALLS MILL RENOVATION
DEPOT STREET, SOUTH WINDHAM, ME

CLIENT: RESURGENCE ENGINEERING

VIL_RESP02180



1E SCHEMATIC SITE PLAN
1/32" = 1'-0" AT 11x17

RESURGENCE
ENGINEERING & PRESERVATION, INC.
132 BRENTWOOD STREET
PORTLAND, ME 04103
V/F (207) 773-4880
RESURGENCE@VERIZON.NET

CLIENT: NORTHEAST CIVIL SOLUTIONS
153 U.S. ROUTE 1
SCARBOROUGH, ME 04074

DATE	SCALE
24 OCT 08	AS NOTED
DRAWN BY: A. HODSON	CHECKED BY: A. HODSON
PROJECT NUMBER: 08-027	CAD FILE: LITTLE FALLS.DWG

PE STAMP - ENGINEER OF RECORD

PROJECT:
KEDDY MILL FDN ASSESSMENT
SOUTH WINDHAM, ME

SYMBOL KEY

- 2.X — PHOTO NUMBER
- SUMMIT BORING OR PROBE
- SLAB ACCESS HOLE

DRAWING NUMBER
S 1
SHEET X OF Y

VIL_RESP02181

APPENDIX B
EXPLORATION LOGS

EXPLORATION REPORT COVER SHEET

The exploration report has been prepared by the geotechnical engineer from both field and laboratory data. Differences between field logs and exploration reports may exist.

It is common practice in the soil and foundation engineering profession that field logs and laboratory data sheets not be included in engineering reports, because they do no represent the engineer's final opinion as to appropriate descriptions for conditions encountered in the exploration and testing work. The field logs will be retained in our office for review. Results of laboratory tests are generally shown on the borings logs or are described in the text of the report as appropriate.

Drilling and Sampling Symbols:

SS = Split Spoon
ST = Shelby Tube – 2" OD, disturbed
UT = Shelby Tube – 3" OD, undisturbed
HSA = Hollow Stem Auger
CS = Casing – size as noted
Sv = Vane Shear
PP = Pocket Penetrometer
RX = Rock Core – size as noted
Hyd = Hydraulic advance of probes
WOH = Weight of Hammer
WOR = Weight of Rod
GS = Grain Size Data
PI = Plasticity Index
LL = Liquid Limit
w = Natural Water Content
USCS = unified Soil Classification System

Water Level Measurements:

Water levels indicated on the boring logs are the levels measured in the boring at the times indicated. In pervious soils, the indicated elevations are considered reliable groundwater levels. In impervious soils, the accurate determination of groundwater elevations may not be possible, even after several days of observations; additional evidence of groundwater elevations via observation or monitoring wells must be sought.

Gradation Description and Terminology:

Boulders:	Over 8 inches	Trace:	Less than 5%
Cobbles:	8 inches to 3 inches	Little:	5% to 15%
Gravel:	3 inches to No.4 sieve	Some:	15% to 25%
Sand:	No.4 to No. 200 sieve	Silty, Sandy, etc.:	Greater than 25%
Silt:	No. 200 sieve to 0.005 mm		
Clay:	less than 0.005 mm		

Density of Granular Soils and Consistency of Cohesive Soils:

CONSISTENCY OF COHESIVE SOILS		DENSITY OF GRANULAR SOILS	
SPT N-value blows/ft	**Consistency**	**SPT N-value blows/ft**	**Relative Density**
0 to 2	Very Soft	0 to 3	Very Loose
3 to 4	Soft	4 to 9	Loose
5 to 8	Firm	10 to 29	Compact
9 to 16	Stiff	30 to 49	Dense
17 to 32	Very Stiff	50 to 80	Very Dense
>32	Hard		

SUMMIT
GEOENGINEERING SERVICES
434 Cony Road
Augusta, Maine 04330

SOIL BORING LOG

Project: Little Falls Mill Renovation
Depot Street
South Windham, Maine

Boring #: **B-1**
Project #: 17417
Sheet: 1 of 1
Prep by: CWC

Drilling Co: Nothern Test Boring
Foreman: Mike Nadeau
Summit: Craig Coolidge, P.E.

Ground Elevation: Approximately 94 ft +/-
Reference: Site Plan by Resurgence Engineering & Preservation
Date started: 9/30/2008 Date Comp: 9/30/2008

DRILLING METHOD	SAMPLER
Vehicle: ATV	Type: 24" SS
Model: Diedrich D-50	Hammer: 140 LB
Method: 4" Casing/RW	Fall: 30"

GROUND WATER DEPTH

Date	Depth	Elevation	Comments
9/30/2008	2.5 ft	91.5 ft +/-	Water Measurement

Depth (ft.)	SAMPLE DATA No.	Pen/Rec (in.)	Depth (ft)	Blows	ENGINEERING DESCRIPTION	GEOLOGIC DESCRIPTION
					6-inch thick concrete slat	CONCRETE SLAB
1					Void space underlying slab to a depth of	6"
					3.3' with standing water at 2.5'	VOID SPACE
2						
3					Standing water at 2.5' (river elevation)	
	S-1	21/5	3.3 - 5	1	Dark brown SAND, little to trace Gravel	3.3'
4				WOH	Silt, and Organics, very loose, wet, SM-SI	FILL
				1	Occasional brick, ash, and/or coal debris	
5				WOH		
	S-2	24/6	5 - 7	1	Same as above, very loose, wet, SM-SI	
6				WOH		
				1		
7				WOH		
	S-3	24/5	7 - 9	1	Same as above, very loose, wet, SM-SI	
8				WOH		
				WOH		
9				WOH		
	S-4	24/10	9 - 11	1	Same as above, very loose, wet, SM-SI	
10				1		
				3	Light gray medium-fine SAND, little Sil	10'
11				1	and Organics, loose, wet, SM	GLACIAL MARINE
					Wood debris in wash water	
12					(possible wood cribbing)	
	S-5	24/8	12 - 14	2	Gray medium-fine SAND, little Silt	
13				4	trace Organics, wet, SM	
				1		
14				1		
	S-6	24/24	14 - 16	1	Gray Silty CLAY, trace fine Sand	14'
15				1	very soft, wet, CL	PP = 500 psf
				1		
16				1		
					Sv = 1,020 psf, 65 psf remold	
17						
					Sv = 1,065 psf, 45 psf remold	
18						
	S-7	2/2	18 - 18.2	50/2"	Rock fragments in spoon tip	
19	ROCK CORE				Medium-soft, medium grained, dark gra	18.2'
	Run	Recovery	Depth	RQD	SCHIST with miscovite-biotite-quartz	BEDROCK
20	C-1	100%	18 - 21	31%	moderately fractured and weathere	Mohs Scale = 3
					Joints dipping to steep (35 to 85 degrees),	
21					undulated, rough, and loose	
					End of exploration at 21'	21'
22						

VIL_RESP02184

SUMMIT
GEOENGINEERING SERVICES
434 Cony Road
Augusta, Maine 04330

SOIL BORING LOG

Project:	Little Falls Mill Renovation Depot Street South Windham, Maine	Boring #:	B-2
		Project #:	17417
		Sheet:	1 of 1
		Prep by:	CWC
Drilling Co:	Nothern Test Boring	Ground Elevation:	Approximately 94 ft +/-
Foreman:	Mike Nadeau	Reference:	Site Plan by Resurgence Engineering & Preservation
Summit:	Craig Coolidge, P.E.	Date started:	9/30/2008 Date Comp: 10/1/2008

DRILLING METHOD	SAMPLER
Vehicle: ATV	Type: 24" SS
Model: Diedrich D-50	Hammer: 140 LB
Method: 4" Casing/RW	Fall: 30"

GROUND WATER DEPTH

Date	Depth	Elevation	Comments
9/30/2008	2.5 ft	91.5 ft +/-	Water Measurement

Depth (ft.)	SAMPLE DATA No.	Pen/Rec (in.)	Depth (ft)	Blows	ENGINEERING DESCRIPTION	GEOLOGIC DESCRIPTION
					6.5-inch thick concrete slab	CONCRETE SLAB
1					Void space underlying slab to a depth of	6.5"
					5.6' with standing water at 2.5'	VOID SPACE
2						
3					Standing water at 2.5' (river elevation)	
4						
5						
	S-1	24/2	5 - 7	WOR	Soil surface at 5.6'	
6				WOR	Dark brown SAND, little to trace Gravel	5.6'
				WOR	Silt, and Organics, very loose, wet, SM-SI	FILL
7				WOR	Occasional brick, ash, and/or coal debris	
	S-2	24/6	7 - 9	WOR	Same as above, very loose, wet, SM-SI	
8				WOR		
				WOR		
9				WOH		
	S-3	24/10	9 - 11	WOH	Same as above, very loose, wet, SM-SI	
10				1		
				5	Dark brown Gravelly SAND, trace Silt	10'
11				6	compact, wet, SW	GLACIAL ALLUVIUM
	S-4	4/4	11 - 11.3	50/4"	Cobble at 11.3'	
12						
13						
14						
	S-5	24/5	14 - 16	2	Same as above, compact, wet, SW	
15				10		
				10		
16				3		
	S-6	24/10	16 - 18	7	Gray medium-fine SAND, some to little	16'
17				7	Clay and Silt, little to trace Gravel	GLACIAL MARINE
				7	compact, wet, SM	
18				7		
	S-7	24/9	18 - 20	3	Same as above, compact, wet, SM	
19				7		
				7		
20				6		
	S-8	22/10	20 - 21.8	10	Same as above, compact, wet, SM	
21				6		
				9		
22				50/4"	Rock fragments at spoon tip	
					End of exploration at 21.8', refusal	21.8' BEDROCK

VIL_RESP02185

SUMMIT
GEOENGINEERING SERVICES
434 Cony Road
Augusta, Maine 04330

SOIL BORING LOG

Project: Little Falls Mill Renovation
Depot Street
South Windham, Maine

Boring #: **B-3**
Project #: 17417
Sheet: 1 of 1
Prep by: CWC

Drilling Co: Nothern Test Boring
Foreman: Mike Nadeau
Summit: Craig Coolidge, P.E.

Ground Elevation: Approximately 92 ft +/-
Reference: Site Plan Topography by Oak Engineers, LLC
Date started: 10/1/2008 Date Comp: 10/1/2008

DRILLING METHOD	SAMPLER
Vehicle: ATV	Type: 24" SS
Model: Diedrich D-50	Hammer: 140 LB
Method: 4" Casing/RW	Fall: 30"

GROUND WATER DEPTH

Date	Depth	Elevation	Comments
10/1/2008	0.5 ft	91.5 ft +/-	Water Measurement

Depth (ft.)	SAMPLE DATA No.	Pen/Rec (in.)	Depth (ft)	Blows	ENGINEERING DESCRIPTION	GEOLOGIC DESCRIPTION
	S-1	24/7	0 - 2	1	Dark brown SILT, rootlets, moist, ML	TOPSOIL
1				2	Dark brown SAND, some wood debris and	5"
				3	organics, little to trace Gravel and Silt	FILL
2				1	loose, wet, SM-SP	
	S-2	24/6	2 - 4	1	Dark brown SAND, little to trace Gravel	
3				1	Silt, and Organics, loose, damp, SM-SP	
				1	Occasional brick, ash, and/or coal debris	
4				2		
5						
	S-3	24/7	5 - 7	1	Same as above, very loose, wet, SM-SI	
6				1		
				1		
7				1		
	S-4	24/10	7 - 9	1	Same as above, very loose, wet, SM-SI	
8				3		
				5	Dark brown SAND, little Gravel, trace	8'
9				5	Silt, wet, SW	GLACIAL ALLUVIUM
10					Color change in wash water	9.5'
	S-5	24/20	10 - 12	1	Gray Silty CLAY, trace fine Sand	GLACIAL MARINE
11				WOH	very soft, wet, CL	PP = 500 psf
				1		wc = 41.9%
12				WOH		
					Sv = 935 psf, 65 psf remold	
13						
					Sv = 1,140 psf, 75 psf remold	
14						
	S-6	24/24	14 - 16	1	Same as above, very soft, wet, CL	PP = 500 psf
15				1		wc = 34.6%
				1		
16				1		
	UT-1	12/8	16 - 17	Hyd	Same as above, very soft, wet, CL	wc = 28.0%
17				Push		
					Unable to advance shelby tube at 17	17'
18						
	S-7	24/10	18 -20	11	Gray medium-fine SAND, some to little	
19				7	Clay and Silt, little to trace Gravel.	
				10	compact, wet, SM	
20				4		
	S-8	14/10	20 - 20.2	5	Same as above, compact, wet, SM	
21				7		
				50/2"	Rock fragments at spoon tip	
22					End of exploration at 21.2', refusal	21.2'
						BEDROCK

VIL_RESP02186

SUMMIT
GEOENGINEERING SERVICES
434 Cony Road
Augusta, Maine 04330

SOIL BORING LOG

Project: Little Falls Mill Renovation
Depot Street
South Windham, Maine

Boring #: **B-4**
Project #: 17417
Sheet: 1 of 1
Prep by: CWC

Drilling Co: Nothern Test Boring
Foreman: Mike Nadeau
Summit: Craig Coolidge, P.E.

Ground Elevation: Approximately 99 ft +/-
Reference: Site Plan Topography by Oak Engineers, LLC
Date started: 10/1/2008 Date Comp: 10/1/2008

DRILLING METHOD
Vehicle: ATV
Model: Diedrich D-50
Method: 4" Casing/RW

SAMPLER
Type: 24" SS
Hammer: 140 LB
Fall: 30"

GROUND WATER DEPTH

Date	Depth	Elevation	Comments
10/1/2008	7 ft	92 ft +/-	Water Measurement

Depth (ft.)	SAMPLE DATA No.	Pen/Rec (in.)	Depth (ft)	Blows	ENGINEERING DESCRIPTION	GEOLOGIC DESCRIPTION
	S-1	24/16	0 - 2	2	Dark brown SILT, rootlets, moist, ML	TOPSOIL
1				3	Olive brown and mottled Silty CLAY	5"
				5	trace fine Sand, firm, moist, CL	GLACIAL MARINE
2				4		PP = 4,000 psf
3						
4						
5						
	S-2	24/24	5 - 7	2	Same as above, firm, moist, CL	PP = 4,000 psf
6				2		wc = 23.2%
				2		
7				2		
						Water at 7'
8						
9						
					Softer drilling at 9'	9'
10						
	S-3	24/18	10 - 12	1	Olive Organic SILT, little fine Sand	wc = 56.1%
11				2	soft, moist, OL	
				3		
12				7	Dark brown SAND, little Gravel, trace	11.5'
					Silt, wet, SW	GLACIAL ALLUVIUM
13						
14						
					End of exploration at 14.1', refusal	14.1'
15						BEDROCK
16						
17						
18						
19						
20						
21						
22						

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